

Abstract No. : A528

Theme : Clinical Research on PD Fluids and Regimens

The clinical usefulness of novel biocompatible peritoneal dialysis fluids (PDFs) with neutral pH and low glucose degradation product (GDP) concentration

Choi, H.Y., Han, S.H., Lee, J.E., Moon, S.J., Kim, D.K., Lee, T.H., Kim, B.S., Park, H.C., Kang, S.W., Choi, K.H., Ha, S.K., Han, D.S., Lee, H.Y.; Department of Internal Medicine, Institute of Kidney Disease, Yonsei University College of Medicine, Seoul, South Korea

Objectives: The recent studies have been focused on the impact of PDFs exposure and the relationship to changes in the peritoneal membrane's dialytic function. This relationship may be associated, either to a direct effect of glucose itself, or to GDP formed during heat sterilization of the solutions. We performed a randomized, prospective study to investigate the impact of novel biocompatible PDFs with neutral pH, low GDP concentration (balance®, Fresenius Medical Care, St.Wendel, Germany, **Balance group**) compared with conventional PDFs (**Standard group**) on peritoneal solute and fluid transport characteristics as well as on other biochemical and clinical parameters. **Methods:** 104 clinically stable patients maintained on CAPD for more than 6 months in Severance Hospital were enrolled. After being randomized into **Balance** or **Standard** group (Balance:Standard=51:53), subjects undertook blood and effluent sampling, PET and adequacy evaluation at 0, 4, 8, 12 and 24 months visit. **Results:** Actual D/P cr values tend to be stable in **Balance** group compared to **Standard** group (0months: 0.67 ± 0.11 vs. 0.67 ± 0.10 , 4 months: 0.66 ± 0.10 vs. 0.65 ± 0.10 , 8 months: 0.67 ± 0.10 vs. 0.66 ± 0.11 , 12 months: 0.66 ± 0.10 vs. 0.66 ± 0.11 , 24 months: 0.67 ± 0.11 vs. 0.70 ± 0.09). D/P Cr (% changes from the baseline values) also tend to be stable in **Balance** group whereas those of **Standard** group were increasing with time, but did not reveal significant differences between the two groups. The peritoneal ultrafiltration (mL/g dextrose load) was significantly higher in **Balance** group compared to **Standard** group at all follow-up visits (4 months: 9.1 ± 4.3 vs. 6.0 ± 3.0 , 8 months: 8.3 ± 3.4 vs. 6.0 ± 3.0 , 12 months: 8.9 ± 3.3 vs. 6.1 ± 3.3 , 24months: 8.1 ± 5.1 vs. 6.9 ± 4.3 mL/dextrose g, $p < 0.05$). Peritoneal Kt/V urea and total weekly Kt/V urea at 4 months in **Balance** group showed significantly higher values than those of **Standard** group (1.9 ± 0.4 vs. 1.7 ± 0.3 , 2.0 ± 0.4 vs. 1.8 ± 0.3 , $p < 0.05$). The residual renal function tends to be stable in **Balance** group compared to **Standard** group, though there was no significant difference between the two groups. Effluent CA125 levels in **Balance** group were significantly higher than those in **Standard** group at all follow-up visits during the 24 months follow-up period (4 months: 37.8 ± 20.8 vs. 22.0 ± 9.5 , 8 months: 41.2 ± 20.3 vs. 25.9 ± 11.3 , 12 months: 40.4 ± 21.4 vs. 28.6 ± 13.1 , 24 months: 42.1 ± 22.8 vs. 33.2 ± 12.8 U/mL, $p < 0.05$). **Conclusion:** This study suggested that the use of novel biocompatible PDFs with neutral pH and low GDP may contribute not only to the improvement of the peritoneal ultrafiltration and the increase in peritoneal effluent CA125, a marker of peritoneal membrane integrity but also possibly to the preservation of residual renal function in PD patients.